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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/824,258

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Lew Aronson

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WORKMAN NYDEGGER  
60 EAST SOUTH TEMPLE  
1000 EAGLE GATE TOWER  
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EXAMINER

PASCAL, LESLIE C

ART UNIT

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2613

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/824,258	<b>Applicant(s)</b> ARONSON ET AL.	
	<b>Examiner</b> Leslie Pascal	<b>Art Unit</b> 2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 January 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-21 and 23-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 21 and 23 is/are allowed.
- 6) ☐ Claim(s) 1-20, 24 and 25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

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1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action: A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 8-10, 12, 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Hori (U.S. Patent No. 5,615,034).

Regarding claims 1 and 9, Hori teaches a transceiver, the transceiver comprising: a signal power source (reference numeral 23 in Figure 1) adapted to produce a physical layer signal for transmission across a physical link (reference numeral 7 in Figure 1); a high-speed data modulator (reference numeral 1 in Figure 1) that is coupled to the signal power source wherein the signal power sources configured to modulate a physical layer signal with a high-speed data signal received from the high-speed data modulator; an out-of-band data modulator (reference numeral 29 in Figure 1) that is coupled to the signal power source wherein the signal power source is configured to modulate the physical layer signal in response to out-of-band diagnostic and/or configuration data received from the out-of-band data modulator wherein modulation by the high-speed data modulator and out-of- band data modulator produces an outgoing double modulated signal including high-speed data and out-of-band data (e.g. the output of reference numeral 23 in Figure 1); and a controller (reference numeral 28 in Figure 1) configured to generate information regarding the transceiver and/or to receive information from a host device coupled to the transceiver over a standard bus, The controller further configured to provide the information (reference letter "C" in Figure 1) to the out-of-band modulator to be modulated as at least some of the out-of band data.

In regard to claim 8, the digital diagnostics configured to monitor and determine the health of the receiver (column 5 lines 21- 29) and a processor (reference numeral 49 in Figure 1) coupled to the out-of-band data detector, the processor configured to receive the out-of-band diagnostic and/or configuration data; and a high- speed data amplifier (reference numeral 42 in Figure 1) coupled to the signal reception element, the high-speed data amplifier configured to receive high-speed data.

Regarding claim 12, Hori teaches that in an environment including an optical transceiver (reference numeral 2 in Figure 1) in communication with a remote optical transceiver (reference numeral 4 in Figure 1) and in communication with a host device (reference numeral 48 in Figure 1), a method of transmitting data on a physical link comprising: modulating (reference numeral 29 in Figure 1), at the optical transceiver; a data signal with high- speed data (reference numeral 11 in Figure 1), wherein the optical transceiver transmits the high- speed data to the host device over a high-speed data interface (reference numeral 23, 7 in Figure 1); modulating, at the optical transceiver,

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the data signal with out-of-band diagnostic and/or configuration data (reference numeral 21, 30 in Figure 1) wherein modulating the data signal with high-speed data and out-of-band diagnostic and/or configuration data creates an outgoing double modulated signal (e.g. output of reference numeral 23 in Figure 1) that is a physical layer signal for transmission on a physical link (reference numeral 7 in Figure 1), wherein the out-of-band diagnostic and/or configuration data is data transmitted by the transceiver over the high speed data interface (reference numeral 7 in Figure 1) to the remote transceiver for the use of the, transceiver and the remote transceiver in diagnostic operations (column 5 lines 21-29) and wherein the out-of-band diagnostic and/or configuration data is transmitted by the transceiver to the host device (reference numeral 48 in Figure 1) over a low speed data interface (e.g. the electrical connections between elements receiver 41 and demodulator 48 in Figure 1); and transmitting, at the optical transceiver, the double modulated signal (e.g. output of reference numeral 23 in Figure 1) onto the physical link (reference numeral 7 in Figure 1).

Regarding claims 10 and 16, Hori teach a receiver for receiving (reference numeral 4 in Figure 1) data comprising: a signal reception element (reference numeral 41 in Figure 1) configured to receive a physical layer signal, from a physical link (reference numeral 7 in Figure 1); extracting an out-of-band signal with a data detector (reference numeral 43, 48 in Figure 1) coupled to the signal reception element for extracting out-of-band data from the physical layer signal; digital diagnostics (reference numeral 49 in Figure 1) coupled to the signal reception element and to the out-of-band detector, and a high-speed data amplifier (reference numeral 42 in Figure 1) coupled to the signal reception element, the high-speed data amplifier configured to receive high-speed data and provide extracted high speed data to element 6.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hori in view of Tsujikado (U.S. Patent No. 6,091,738).

Regarding claim 7, Hori differs from the claimed invention in that Hori fails to specifically teach that the diagnostic and/or configuration data includes identification information that identifies the manufacturer of a transceiver performing the act of modulating the data signal with out-of-band diagnostic data. However, Tsujikado teaches that this concept is well known in the art (column 9 lines 12-18). One skilled in the art would have been motivated to allow the diagnostic and/or configuration data to include

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identification information that identifies the manufacturer of a transceiver performing the act of modulating the data signal with out-of-band diagnostic data in order to allow a system operator to perform maintenance management operation (column 6 lines 54-60) without having to manually configure each unit (column 1 lines 60-64).

5. Claims 6, 11 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hori.

Regarding claim 11, Hori differs from the claimed invention in that Hori fails to specifically teach that the out-of-band data detector comprises an infrared control decoder. However, infrared control decoders are well known in the art and Official Notice is given to that effect. One skilled in the art would have been motivated to include an infrared data decoder in the device of Hori in order to allow for the reception of infrared optical signals. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to include an infrared decoder in the device of Hori. Regarding claims 6 and 20, Hori differs from the claimed invention in that Hori fails to specifically teach that the out-of-band modulator is configured to modulate using at least one of phase shift keying, binary phase shift keying, quadrature phase shift keying, and Manchester encoding. However, each of the claimed modulation formats is well known in the art and Official Notice is given to that effect. One skilled in the art would have been motivated to employ any one of the claimed modulation formats in order to meet design specifications or to overcome specific disturbances remedied by particular modulation formats. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to configure the out-of-band modulator to modulate using at least one of phase shift keying, binary phase shift keying, quadrature phase shift keying, and Manchester encoding.

6. Claims 2-4, 13, 15 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hori in view of Varga (U.S. Patent Application Publication No. 2005/0213621).

Regarding claims 2-4, Hori teaches that the transceiver is an optical transceiver (inherent), but differs from the claimed invention in that Hori fails to specifically teach that the signal power source comprises a laser driver and laser; the transceiver further comprises an average power bias circuit configured to control the average power output by the laser, wherein the out-of-band data modulator is coupled to the average power bias circuit; and the laser driver further comprises an extinction ratio command input configured to control the extinction ratio of a signal output by the laser, wherein the out-of-band data modulator is coupled to the extinction ratio command input. However, Varga teaches that each of these elements is well known in the art (Figures 5 - 7; paragraph [0004]; reference numeral 440 in Figure 7). One skilled in the art would have been motivated to include the elements taught by Varga in order to dynamically adjust the properties of the laser in response to environmental conditions (Varga [0004]).

7. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hori in

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view of Varga (U.S. Patent Application Publication No. 2005/0213621) and further in view of Bu-Abbud (4958926).

Although Varga does not teach specifics about his bias circuit, Bu-Abbud teaches that it is well known for a biasing/monitoring circuit to have an amplifier and transistor (28b and 26c) in order to monitor and control the laser. It would have been obvious to control the laser as taught by Bu-Abbud in the system of Varga since Varga does not teach specifics about his biasing device.

8. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hori in view of MacKinnon (U.S. Patent No. 6,366,373).

Regarding claim 5, Hori teaches that the transceiver is an optical transceiver (inherent), that the signal power source comprises a driver (reference numeral 21, 22, 30 in Figure 1) and a light source (reference numeral 23 in Figure 1). Hori differs from the claimed invention in that Hori fails to specifically teach a laser as the light source or that the driver further comprises high-speed data 1 level command that defines the power output by the laser when a high-speed data 1 is output, wherein the out-of-band data modulator is coupled to the high-speed data 1 level command. However, MacKinnon teaches a signal power source comprising a laser driver and laser (FIG. 9 (98-laser diode, laser driver- 100,102,104,106,108)); and the laser driver further comprises high-speed data 1 level command that defines the power output by the laser when a high-speed data 1 is output (FIG. 9 (102-higher application rate switch, 104-second current control) in which the high speed data 1 level command/control defines power output by the laser by controlling the drive current to the laser when a high-speed data 1 is output as seen in FIG. 7), wherein the out-of-band data modulator is coupled to the high-speed data 1 level command (FIG. 9 (106-lower rate management data switch, 108-third current control device) in which the out-of-band modulator (e.g. 106,108) is coupled to the high-speed data 1 level command/control (e.g. 102,104)). One skilled in the art would have been motivated to include these elements in order to allow for communication of digital signals. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to include those elements taught by MacKinnon in the device of Hori.

9. Claim 14 is rejected under 35 U.S.C. 103(9) as being unpatentable over Hori in view of either Toshihisa (20040109696) or Krick (4763326).

Although Hori does not teach specifics about how he modulates the signal, Toshihisa and Krick both teach that it is well known to modulate a signal and varying the peak power. See paragraph 104 of Toshihisa and column 5, lines 62 –column 6, line 9 of Krick. It would have been obvious to control the peak power as taught by Toshihisa or Krick in order to satisfy communication standards as taught by Toshihisa.

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11. Claim 18 is rejected under 35 U.S.C. 103(9) as being unpatentable over Hori in view of Fishman (5654816).

Although Hori does not teach specifics about how he modulates the signal, Fishman teaches that it is well known to detect a peak power in order to detect an out of band signal (tone). See column 4, lines 17-29. It would have been obvious to detect the out of band signal by detecting the peak power as taught by Fishman since Fishman teaches that it is well known to detect an out of band signal using peak power.

12. Claims 17 and 19 are rejected under 35 U.S.C. 103(9) as being unpatentable over Hori in view of Yamazaki et al (JP57075042).

Although Hori does not teach specifics about how he modulates the signal, Yamazaki et al teach that it is well known to detect a average power in order to detect an out of band signal (pilot). See the abstract. It would have been obvious to detect the out of band signal by detecting the peak power as taught by Yamazaki et al since Yamazaki et al teach that it is well known to detect an out of band signal using peak power.

In regard to claim 19, Hori teaches the digital diagnostics configured to monitor and determine the health of the receiver (column 5 lines 21- 29) and a processor (reference numeral 49 in Figure 1) coupled to the out-of-band data detector, the processor configured to receive the out-of-band diagnostic and/or configuration data; and a high-speed data amplifier (reference numeral 42 in Figure 1) coupled to the signal reception element, the high- speed data amplifier configured to receive high-speed data. In that he is concerned with the health of the system, it would have been obvious to use the extinction ration determined by the average power in order to determine how the system is operation.

13. Claims 21 and 23 are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leslie Pascal whose telephone number is 571-272-3032. The examiner can normally be reached on Monday- Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on 571-272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Leslie Pascal/  
Primary Examiner  
Art Unit 2613